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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,105	07/31/2003	James J. Schwab	02ML-104917	7747

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EXAMINER

LAWRENCE JR, FRANK M

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/631,105

Applicant(s)

SCHWAB, JAMES J.

Examiner

Frank M. Lawrence

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1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-14 and 16-23 is/are rejected.
- 7) ☒ Claim(s) 7 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 17 is rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim must be in one sentence form only.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Selway (3,456,928).
5. Selway '928 teaches a gas cleaning method, comprising removing larger entrained particles in an upstream scrubber having a restricted throat (10) and a sprayer (9) for contacting droplets with particles, collecting a removing droplets and particles via a drain (21), and removing remaining finer entrained particles from the scrubbed stream in a downstream venturi scrubber (28,31) with a sprayer (30) (see figure 3, col. 4, line 31 to col. 5, line 39).
6. Claims 1, 2, 8-10, 16, 17 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Keinanen et al. (6,149,715).

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7. Keinanen et al. '715 teach a gas cleaning system, comprising a first venturi scrubber (5) having a spray nozzle (7) for creating liquid droplets in a gas stream to contact dust particles in the stream, a scrubber (10) for coalescing and removing the droplets and particles, and a second venturi scrubber (13) having nozzles (14) for contacting entrained particles not removed in the first scrubbers (see figures, col. 4, line 51 to col. 5, line 38). The second venturi scrubber has a smaller diameter than the first venturi scrubber, which will inherently allow a greater pressure drop, and finer particles will pass further into the scrubbing system.

8. Claims 16, 17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Calaceto (4,460,517).

9. Calaceto '517 teaches a process for removing particles from a gas stream, comprising removing particles having a diameter of greater than 2 microns in parallel venturi scrubbers with contact sprayers for generating droplets, collecting and removing the droplets through drains (52), and removing remaining smaller particles in a downstream electrostatic precipitator (50) (see figure 1, col. 3, line 37 to col. 5, line 7). An 8" water pressure drop is used for the venturi scrubbers.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3, 6, 11, 14, 18, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keinanen et al. '715 in view of Schwab (6,383,260).

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12. Keinanen et al. '715 disclose all of the limitations of the claims except that the droplets have a diameter of from about 200-750 microns. Schwab '260 discloses a venturi scrubber for removing particles from a gas stream using a sprayer to produce droplets having a 40-200 micron diameter, and also teaches that prior art venturi scrubbers produced droplets having a 500-2000 micron diameter (col. 2, lines 21-26, col. 4, lines 3-21). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Keinanen et al. '715 by using a preferred contact droplet size in order to provide an optimum removal efficiency based on the size of particulates in the process gas stream.

13. Claims 4, 5, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keinanen et al. '715 in view of Calaceto '517.

14. Keinanen et al. '715 disclose all of the limitations of the claims except that the large particles have a diameter of greater than about 2 microns and that the first scrubbing step has a pressure drop from about 1-10" water. Calaceto '517 discloses a venturi scrubbing system as described in paragraph 9 above. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Keinanen et al. '715 by designing the venturi scrubber to have a pressure drop that is most efficient in removing a given particle size in a process gas stream.

***Allowable Subject Matter***

15. Claims 7 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references listed on the attached PTO-892 form disclose venturi scrubber systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank M. Lawrence  
Primary Examiner  
Art Unit 1724

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*Frank Lawrence*  
11-30-04